SPORT-SPECIFIC PSYCHOLOGICAL SKILLS: A COMPARISON BETWEEN PROFESSIONAL AND SOCIAL BASKETBALL PLAYERS IN SOUTH AFRICA

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DECLARATION

I, the undersigned, hereby declare that the work contained in this thesis is my own original work, and that I have not previously in its entirety or in part submitted it at any university for a degree.

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ABSTRACT

In the present study the psychological skills of professional and social basketball players were compared. A literature review has highlighted the need for domain specific and sport specific psychological skills research, from countries outside the United States of America. The Athletic Coping Skills Inventory-28 (ACSI-28) was administered to professional (n=60) and social (n=67) basketball players. The ACSI-28 is a multidimensional scale that measures seven specific psychological skills and also yields a global psychological skills score. The results showed that professional basketball players rated their global psychological skills significantly higher than social basketball players. The results also showed that the professional basketball players scored significantly higher on five of the seven specific psychological skills namely: coping with adversity, peaking under pressure, goal setting, concentration and self-confidence. Cross-cultural differences were found between South African and Greek basketball players. The assumption that psychological skills is domain specific was not verified as baseball and basketball players from different countries showed remarkably similar ACSI-28 profiles. The results can be used to develop a psychological skills training programme which is relevant for elite and pre-elite basketball players in South Africa.

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OPSOMMING

Die sielkundige vaardighede van professionele- en sosiale basketbalspelers is in die huidige studie onderling vergelyk. 'n Literatuurstudie het die behoefte aan domein-spesifieke, sowel as sport-spesifieke sielkundige-vaardigheidsnavorsing beklemtoom, veral vir lande buite die Verenigde State van Amerika. Die Athletic Coping Skills Inventory-28 (ACSI-28) is toegepas op professionele (n=60) en sosiale (n=67) basketbalspelers. Die ACSI-28 is 'n multidimensionele skaal wat sewe spesifiek sielkundige vaardighede meet. Hierdie vaardighede kan gekombineer word om 'n globale sielkundige vaardigheidstelling te kry. Volgens die resultate het die professionele basketbalspelers hul globale sielkundige vaardighede beduidend hoër as sosiale basketbalspelers geëvalueer. Die professionele basketbalspelers het hoër tellings as sosiale basketbalspelers behaal op vyf van die sewe spesifiek sielkundige vaardighede naamlik: hantering van terugslae, prestasie onder druk, doelwitstelling, konsentrasie vermoë en self vertroue . Kruis-kulturele verskille is gevind tussen Suid-Afrikaanse en Griekse basketbalspelers. Die aanname, dat sielkundige vaardighede domein-spesifiek is, is nie ondersteun nie, aangesien bofbal en basketbalspelers van verskillende lande ooreenstemmende ACSI-28 profiele getoon het. Die resultate kan aangewend word om 'n sielkundige vaardigheidsopleidingsprogram te ontwikkel wat relevant vir elite and pre-elite basketbalspelers in Suid Afrika is.

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This work is the result of a research project, which is of the same extent as that required for master's thesis.

It is a rule of the Department of Psychology that the report of the research may take the form of an article, which is ready for publication to a scientific journal.

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One of the most intriguing questions within the domain of sport psychology has been how to consistently maximise the performance of athletes. The magnitude of this question is reflected in the research trends in applied sport psychology. Past research tended to focus on the personality characteristics that differentiated successful athletes from unsuccessful athletes, that difference however is now viewed largely in terms of the psychological skills athletes have acquired and used (Thomas & Fogarty, 1997). Thus, expert athletes in comparison to other competitors have shown to make more use of goal setting and post-competition evaluations, to have better developed plans for concentrating during competitions and refocusing after distractions and to have better control over thoughts and emotions (Gould, Eklund & Jackson, 1992; Orlick & Partington, 1988; Williams & Krane, 1992).

Evidence supports the position that American athletes can be differentiated on the basis of psychological skills, but there is little evidence to suggest that this also applies to athletes from other countries like South Africa. Asian researchers (Cox, Liu & Qiu, 1996) have noticed the lack of worldwide research and have called for more cross-cultural investigations involving psychological skills. Cox et al. believe "the accepted hypothesis that athletes of varying skill level can be differentiated on the basis of psychological skill would be strengthened if it could be verified in different cultural settings (p.124)".

The aim of the present study was therefore, to assess and compare the psychological skills of professional and social basketball players in South Africa and to provide quantifiable baseline data that can be used to provide relevant psychological skills

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training for South African basketball players. The need for cross-cultural research was further addressed by comparing the profiles of elite athletes from different countries.

Psychological skill remains an elusive construct to define and operationalize. A multi-disciplinary theoretical search of existing theories, actions and constructs related to psychological skills lead to the construction of an appropriate theoretical framework for the present study. This framework facilitated the operationalization of psychological skills. The theoretical framework is shown in Figure 1.

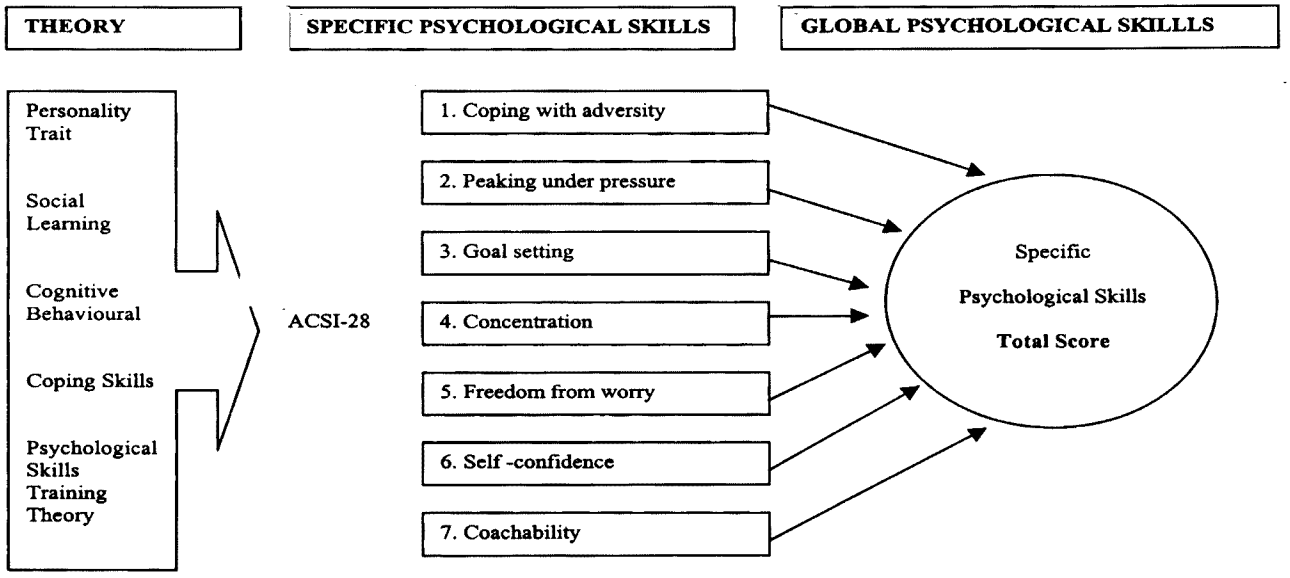

Figure 1. Theoretical framework for the operationalization of psychological skills

The development of psychological skills as pertaining to the sporting context is outlined by the theories shown in Figure 1. Smith, Schutz, Smoll and Ptacek (1995) used these theories to develop the Athletic Coping Skills Inventory-28 (ACSI-28), which was used in the present study. The seven specific psychological skills are derived from the ACSI-

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28 and can be combined to form a multidimensional construct, global psychological skills.

Psychological skills or mental skills are essentially life skills e.g. self-confidence, which an athlete uses to enhance performance. Sellars (1996) believes that whatever level the athlete competes, psychological skills will improve performance, increase consistency in performance and help the athlete cope with adversity. A psychological skill can therefore be described as the athlete's state of mind, which enhances performance.

Coleman Roberts Griffith was a pioneer in sport-specific psychological skills research. Martens (1987) quotes Griffith from a manuscript written in 1930, saying that:

> We know that some men see better than others, some men have a better type of attention than others, some men have a better imagination than others, if we realise that we are what we are in all of these psychological skills mostly because of the ways in which we have been trained, we shall discover that there is a great deal we can do about some of them. The coach who does know something about psychology can hope to train his men in psychological as well as physical skills. (p. 74)

The description of psychological skills has changed drastically from Griffith's time till today. The first attempts to measure the impact of psychological skills in athletic performance were based on personality trait theory, which was prevalent in the 1950's and 1960's. Several important constructs were identified that mediated performance, including anxiety (Spielberger, 1966), motivation (Atkinson, 1957; White, 1959), and

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confidence (Bandura, 1977). Individual differences were described in terms of enduring dispositions towards certain kinds of behaviour.

The rise of social learning theory in the 1970's changed the conceptualisation of psychological skills. Instead of focusing upon enduring characteristics of the person over time, the emphasis was on situational specificity. Researchers became interested in the influence of the social environment on the behavioural differences between individuals. A key assumption of the social learning theory was that individual differences were the result of learning experiences.

The cognitive behavioural approach, which grew in prominence in the 1980's also influenced the conceptualization of psychological skills. It differed from the traditional theoretical orientations of psychoanalysis, which emphasised a passive intervention approach and humanistic psychology, which emphasised reflection and empathy, by proposing that interventions be active and goal directed. This approach to applied sport psychology found a naturally receptive audience among those concerned with performance issues. The emphasis on skills development and on coaching of clients was an appropriate fit with sporting populations. Researchers began to systematically describe the nature of cognitive skills used by athletes in competitive situations (Murphy & Tammen, 1998).

Many of the training methods described in the growing psychological skills training (PST) literature were drawn from interventions developed within cognitive behaviour therapy. For example, Jacobson's progressive muscle relaxation and Wolpe's brief

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version developed for systematic desensitisation, were commonly used by sport psychologists to reduce anxiety. Self-talk and thought stopping developed by J. Beck, were also used extensively by sport psychologists to improve the psychological skills of elite athletes.

A psychological skill therefore came to be viewed as the learned behaviour used by athletes to regulate their athletic performance. If such a skill can be learned, it is reasonable to expect that measurable differences exist in the level of skill development displayed by experts and novices in various sports.

An overlapping area of research, which is theoretically related and closely integrated with psychological skills, is coping skills. Coping skills are defined as skills used to deal with stressors in the sporting environment, while psychological skills are defined as mental skills used in the performance process. It is often difficult to distinguish between coping skills and psychological skills (Murphy & Tammen, 1998). In light of this theoretical entanglement a short review of the relevant coping skills theory will be discussed.

The construct of coping has proven difficult to define and operationalize (Compas & Epping, 1993). This is the direct result of the history of coping research, which has been plagued by differences in conceptualisations. Freud (1936) focused on unconscious processes whereas more current theorists have concentrated on conscious processes (Endler & Parker, 1989; Lazarus & Folkman, 1984). Despite the differences in theoretical orientations there is a growing consensus that coping can be characterised as cognitive,

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affective, and behavioural efforts used to manage specific external and/or internal demands (Endler, Parker & Summerfeldt, 1993).

There is sound research, (Feltz & Landers, 1983; Greenspan & Feltz, 1989; Meyers, Whelan, & Murphy, 1996) to show that instructing people in various approaches to thinking has a demonstrably beneficial impact on motor skill performance. Helping athletes learn, acquire and master the self-regulatory skills needed to succeed in sports became known as psychological skills training, or PST (Martens, 1987). PST is defined as the, "techniques and strategies designed to teach or enhance mental skills that facilitate performance and a positive approach to sport competition" (Vealey, 1998, p. 319).

Vealey (1988) suggests that a distinction needs to be made between psychological skills and methods. Vealey argues that we need to distinguish between the results to be achieved (changing psychological states) and the methods used to achieve them (psychological interventions). Morris and Thomas (1995) make a similar point in their model of the performance-enhancement process. The "skills/attributes" of the performer (e.g., self-awareness, motivation, and leadership) should be separated from the "techniques" used to influence these skills (e.g., physical relaxation and biofeedback).

It is clear that psychological skills has been important to sport psychologists since the inception of the field. There have been several different approaches to the definition of a psychological skill, and there seems to be no clear agreement as to which specific skills are critical to successful sports performance. Although a consensus seems to have emerged that athletes cognitively manage their performance by the use of skills such as

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goal setting and concentration, a comprehensive model of psychological skills development has yet to emerge.

Recent studies into expert performance support the position that acquired psychological skills differentiate successful athletes from other competitors. In contrast to the widely held view that expertise stems from inherited talent, convincing evidence is provided by Ericsson and Charness (1994) that shows that expert performance is mediated by complex cognitive structures and skills acquired over extended periods of time. Expertise therefore reflects the knowledge and skills developed through adaptation to the demands of naturally occurring situations, but more particularly through extended periods of deliberate practice (Ericsson, Krampe, & Tesch-Romer, 1993). It is clearly stated by Thomas and Fogarty (1997) that superior performance is often restricted to relevant tasks within the specific domain of expertise. The knowledge and skills acquired by exceptional performers is therefore domain specific and those seeking to improve basketball performance need to examine the psychological skills required in basketball.

Greek researchers, Kioumourtzoglou, Kourtessis, Michalopoulou and Derri (1998) examined the differences between experts and novices in a variety of sports. It was concluded that the nature of each sport strongly influenced the way psychological skills (perceptual abilities) differentiated elite athletes from novices. Mahoney, Gabriel and Perkins (1987) examined the differences in psychological skills between individual and group sports. It was concluded that the athlete would experience higher anxiety, lower self-confidence and lose concentration easier when involved in individual sports. These studies (Kioumourtzoglou et al.; Mahoney et al.) support previous research (Allard &

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Burnett, 1985; Allard & Starkes, 1980; Thomas & Fogarty, 1997) which found that experts in different sports develop different psychological skills using their knowledge, which is domain specific.

Goudas, Theodorakis and Karamousalidis (1998), examined the mean differences of 126 Greek basketball players scores on the Athletic Coping Skills Inventory-28 (ACSI-28). Elite basketball players were found to exhibit a more positive, global psychological profile than basketball players competing at a lower level. Similar results were reported by Mahoney (1989), who compared elite weightlifters with non-elite weightlifters.

In one of the few cross-cultural investigations Cox et al. (1996), compared the psychological skills among Chinese and American (USA) collegiate basketball players. American basketball players exhibited higher psychological skill scores than Chinese basketball players.

The specific psychological skills as outlined in Figure 1, will be discussed in the following section, along with relevant literature.

Coping with Adversity (Emotional Control)

There is evidence that an ability to deal with frustration and negative emotions is important for competitive athletes (Thomas & Over, 1994; Williams & Krane, 1992). The skill of managing emotions in order to achieve high performance is one that may overlap with general coping skills. Crocker and Graham (1995) suggest that skills that are used to manage emotions in order to reduce stress be viewed as coping skills, whereas the

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management of emotions in the pursuit of high level performance be viewed as a psychological skill.

Vassiliki, Kioumourtzoglou and Tzetzis (1998) assessed the psychological skills of national basketball players and found that elite senior basketball players rated their ability to cope with adversity higher than pre-elite junior basketball players.

Peaking Under Pressure (Anxiety Control)

Anxiety is a complex negative emotion with a variety of physiological, cognitive and behavioural symptoms that has often been linked to stress (Lazarus, 1991). Contemporary theories of anxiety suggest that successful athletes must learn to recognise signs of impending anxiety and prevent it (Gould & Krane, 1992; Hardy & Parfitt, 1991). Rather than simply learning a relaxation technique, this skill might require the ability to self-monitor one's anxiety level, know one's own zone of optimal functioning (Hanin & Syrja, 1995), and have the ability to reduce anxiety in both the somatic and cognitive dimensions (Maynard, Hemmings, & Warwick-Evans, 1995). Peaking under pressure therefore requires athlete's to improve their performance by monitoring and self-adjusting their level of anxiety, while playing.

Silvia (1982) used PST to reduce the game anxiety of a college basketball player. The basketball player's game performance improved in total points scored, field goal percentage, fields goals made and percentage of team scoring. Orlick (1986) believes that the psychological ability to control arousal is a key factor that separates good performers from poor performers

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Goal Setting

Weinberg and Gould (1995) explain goal setting as the attainment of a specific standard of proficiency on a task, usually within a specific time. They have used two models to explain how goals influence athletic behaviour:

A. Direct mechanistic model: The direct mechanistic model specifies that goals influence athletic performance in one of four direct ways:
    1. Goals direct attention to important elements of the skill being performed.
    2. Goals mobilise an athlete's efforts.
    3. Goals prolong an athlete's persistence.
    4. Goals cultivate the development of new learning strategies.
B. Indirect thought process model: The indirect thought process model proposes that goals influence athletic performance indirectly by affecting a performer's psychological state, including self-confidence level, anxiety and satisfaction.

Goal setting research within sport psychology (Burton, Yukelson, Weinberg & Weigand, 1998) has demonstrated consistent and powerful performance enhancement results but these results are still not as impressive as those demonstrated in industrial psychology. This discrepancy has lead to the emergence of an interesting paradox about the effectiveness of goal-setting which suggests that coaches and athletes struggle to make goals work effectively. Burton et al. believe the problem lies in the lack of knowledge on how to systematically set goals and in the inadequacy of practitioners to develop action plans to evaluate goals regularly.

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Burton (1989) found basketball players who made specific goals showed a greater skill improvement than players who made general goals. Lerner, Ostrow, Yura and Etzel (1996) showed that goal setting and imagery programmes, improved basketball free-throw performance over the course of an entire season. Past research in sport psychology strongly suggests that goal setting works well and over 90% of studies show that goal setting has a consistent and powerful effect on performance (Weinberg & Gould, 1995; Mento, Steel & Karren, 1987).

Concentration

Essential components of concentration that seem to be important to athletes include being able to shift attention when necessary, being able to maintain concentration despite distractions, recognising relevant cues and distinguishing them from irrelevant ones and being able to broaden or narrow attention to include relevant cues (Murphy & Tammen, 1998; Orlick & Partington, 1988).

Various theories (Boutcher, 1992; Nideffer, 1976) within sport psychology have examined the nature of concentration. Csikszentmibalyi (quoted in Murphy & Tammen, 1998) suggests that intense levels of concentration are produced when an athlete's skill level is well matched with the challenge he or she faces. It is suggested that concentration is closely related to the task being performed and the level of competition being faced. An athlete may have good concentration skills in one sport, but not another, and variations in concentration are probable for an athlete between different tasks within the same sport.

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Nideffer's theory (1976) in particular has become influential in the field. Nideffer identified eight principles that underlie the ability to control the concentration processes as it relates to performance:

1. Performers need to engage in at least four different types of attention.
2. Different sporting situations will make different attentional demands on an athlete. It is therefore vital that an athlete is able to shift types of concentration to match changing attentional demands.
3. Under optimal conditions, the average person can meet the attentional demands of most sporting situations.
4. There are individual differences in attentional abilities. Thus different performers have different attentional strengths and weaknesses.
5. As physiological arousal increases beyond an individual's optimal level, there is a tendency to rely on the most developed attentional ability.
6. The phenomenon of "choking" or having performance progressively deteriorate, occurs as physiological arousal continues to increase to a point where involuntary narrowing of concentration takes place, causing attention to become internally focused.
7. Changes in physiological arousal affect concentration and the systematic manipulation of physiological arousal is a way of gaining control over concentration.
8. Changes in the focus of attention will affect arousal levels and the manipulation of attention is a way to gain control over arousal

Past research (Bergandi, Shryock & Titus, 1990) has shown basketball players concentration scores to be significantly reliable in accounting for performance fluctuations. Raviv and Nable (1988) showed a significant difference between the quality of concentration of national level basketball players and students who were not athletes. Bowe (1996) found high school and college basketball players differed significantly in concentration skills.

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Murphy and Tammen (1998) reviewed six of the most commonly used psychological skills inventories and found the construct of concentration was identified as integral to the performance management process. Gould, Tammen, Murphy and May (1989) found that 80% of the sport psychology consultants they surveyed, conducted attention training with their clients.

Freedom from Worry (Anxiety Control)

Freedom from worry like peaking under pressure involves both anxiety control and sport performance. Sport performance anxiety may be defined as "a predisposition to respond with cognitive and/or somatic anxiety to competitive sport situations in which the adequacy of the athlete's performance may be evaluated" (Smith, Smoll & Weichman, 1998, p. 107). Although, a number sources of specific threat reside in the sport situation, it is believed by Smith et al. that the most salient sources of threat are the possibilities of failure and of disapproval by significant others who are evaluating the athlete's performance. Maynard et al. (1995) believe the athlete needs to develop the skill to reduce this external threat, which can be accomplished by knowing their optimal level of anxiety and self monitoring their anxiety level.

Savoy (1993) employed a collaborative psychological skills programme with a college basketball player. By worrying less about his performance and what others would think if he performed badly the athlete indicated a decrease in pre-game anxiety. The basketball player showed an improvement in game performance statistics, practice performance, and the coaches overall evaluation of the athlete improved.

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Self-confidence

The terms self-confidence and self-efficacy are used interchangeably because they both refer to the cognitive process by which athletes make judgements about their capabilities to accomplish a particular goal in sport or physical activity. That goal might be quite narrow (e.g., having an 80% free-throw percentage) or more broadly defined (e.g., playing well in a basketball game). Vealey (1996) defined self-confidence in the sporting context "as the degree of certainty an athlete possesses about his / her ability to be successful in sport" (p.471).

Self-confidence theory was developed within the framework of social cognitive theory (Bandura, 1977). Self-confidence beliefs are not about an individual's skills objectively speaking, they are about an individual's judgements of what can be accomplished with those skills. These judgements according to Bandura are a product of a complex process of self-persuasion that relies on cognitive processing of diverse sources of confidence information. Bandura categorised these sources into 4 types:

1. Past performance accomplishments: Performance accomplishments are thought to provide the most dependable self-confidence information because they are based on one's own mastery experiences.
2. Vicarious experiences: Vicarious sources of self-confidence information are thought to be generally weaker than performance accomplishments; however, their influence on self-confidence can be enhanced by factors such as perceived similarities to a model who performs successfully.

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3. Verbal persuasion: Persuasive information includes verbal persuasion, evaluative feedback, expectations by others, self-talk, positive imagery, and other cognitive strategies. Self-confidence beliefs based on persuasive sources are also likely to be weaker than those based on one's accomplishments, according to the theory.
4. Physiological states: Physiological information includes autonomic arousal that is associated with fear and self-doubt or with being psyched up and ready for performance, as well as one's level of fitness, fatigue, and pain.

Researchers (Parfitt & Pates, 1999; Taylor, 1987) have shown that self-confidence scores are significant performance predictors of basketball players. Thomas and Sinclair (1978) proved that basketball players were above average in self-confidence, emotional control and mental toughness than students. An athletes self-confidence or efficacy beliefs are considered one of the most influential constructs mediating performance in sport (Feltz, 1988).

Coachability

Sharp (1992) believes coachability or receiving feedback openly, is essential for the learning process. Essential components of coachability that seem to be important for athletes, include being able to focus on relevant stimuli and to avoid becoming defensive. There is substantial literature for coaches on how to give athletes feedback but there is limited research on coachability. Murphy and Tammen (1998) reviewed six of the most commonly used psychological skills inventories and found the construct of coachability

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had not been previously used in any of the inventories. Vassiliki et al. (1998) found no coachability score differences between elite and pre-elite basketball players.

The aim of the present study was to assess and compare the psychological skills of professional and social basketball players in South Africa and thus provide data for relevant psychological skills training in South Africa. A review of the psychological skills theory and literature lead to the following hypotheses: elite professional basketball players will rate their global psychological skills higher than competitive social basketball players, and elite professional basketball players will rate their specific psychological skills higher than competitive social basketball players. To extend the cross-cultural psychological skills research, a comparison of profiles was made between elite athletes from South Africa, Greece and the United States of America: South African and Greek basketball players were compared to determine if cross-cultural differences existed within basketball. South African and Greek basketball players were compared to baseball players from America to determine if the psychological skills of elite athletes from different sports are domain specific.

METHOD

Participants

The 127 male participants were drawn from twelve basketball teams. The least number of participants in a team was nine, while the most participants in a team was fourteen. Six teams (n = 60) were randomly chosen from the Premier Basketball League (PBL). The six PBL teams were located in Cape Town, Johannesburg, Pretoria, Durban and

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Pietermaritzburg. The PBL players are currently professional, elite athletes who are expected to perform. The other six teams (n = 67) were randomly chosen from the Western Cape League (WCL). All six WCL teams were located in the Western Cape. The WCL basketball players are currently competitive non-professional, social athletes who play for enjoyment, without the intense pressure to win. All the participants are dedicated basketball players who play to win but the WCL players were not expected or being paid to win. The athlete's ages varied between 16 and 36 years.

Questionnaire

The Athletic Copings Skills Inventory-28 (ACSI-28) developed by Smith et al. (1995) was used in this study. There are a number of inventories that are currently being used in sport psychology for the measurement of athletes' psychological skills (Mahoney & Avener, 1977; Nideffer, 1977), but recent research has cast doubt on the psychometric properties on most of these inventories (Chartrand, Jowdy, & Danish, 1992). The Athletic Coping Skills Inventory-28 shows good psychometric qualities and current researchers recommend it highly (Crocker, Kowalski & Graham, 1998; Murphy & Tammen, 1998; Smith & Christensen, 1995).

The ACSI-28 grew out of the original Athletic Coping Skills Inventory, which was designed to measure ways in which athletes coped with the stress of competition (Smith, Smoll & Ptacek, 1990). Although the original inventory comes from the coping model, the new instrument is conceptualised as assessing the psychological skills used by athletes to manage their sports performance, and yields a total score, which is assumed to reflect a multifaceted psychological skills construct.

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The ACSI-28 is a multidimensional scale that measures seven specific psychological skills. The seven subscales consist of four items each. The ACSI-28 assesses the athletes' perception regarding their reactions in typical practice and match situations. Researchers (Crocker et al., 1998; Smith et al., 1995) suggest that each subscale can be used as a specific measure.

Items are scored on a four point scale with the following labels: 0 = almost never: 1 = sometimes: 2 = often; and 3 = almost always. Thus, each of the seven subscale scores can range from 0 to 12, and the total psychological skills score can range from 0 to 84, with higher scores reflecting higher levels of psychological skill. Questions 3, 7, 10, 12, 19 and 23 are reversed scored. The psychological skills definitional items of the ACSI questionnaire are as follows:

- *Coping with adversity*: Remains positive and enthusiastic even when things are going badly: remains calm and controlled: can quickly bounce back from mistakes and setbacks.

- *Peaking under pressure*: Is challenged rather than threatened by pressure situations and performs well under pressure; a clutch performer.

- *Goal setting and mental preparation*: Sets and works toward specific performance goals; pans and mentally prepares himself for games and clearly has a game plan.

- *Concentration*: Not easily distracted; able to focus on the task at hand in both practice and game situations, even when adverse or unexpected situations occur.

- *Freedom from worry*: Does not put pressure on himself by worrying about performing poorly or making mistakes: does not worry about what others will think if he performs poorly.

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- *Confidence and achievement motivation*: Is confident and positively motivated: consequently gives 100% during practice and games and works hard to improve his skills.

- *Coachability*: Open to and learns from instruction: accepts constructive criticism without taking it personally and becoming upset.

The subscales demonstrated adequate temporal stability and moderate internal consistency, which was attributed to the low number of items in each subscale. In the validation sample the ACSI-28 had a full-scale internally consistency (Cronbach's alpha) of .86 and the subscale alphas ranged from .62 to .78 with a mean alpha of .70. The full-scale alpha was also .86 (Smith et al., 1995). Joreskog & Sorbom (quoted in Smith & Christensen, 1995) used confirmatory factor analyses, using the LISTREL 8 programme indicated a good fit (comparative fit index [CFI] = .91; a root mean square error approximation [RMSEA] = .044) between the subscales and the underlying seven-factor model for both male and female athletes. Goudas et al. (1998) judged the subscales to be sufficiently reliable for use in exploratory research. Crocker et al. (1998) believe the strength of the ACSI-28 lies in the nature of the questions, which are sport specific and accurately reflect the multifaceted nature of psychological skills.

Procedure

Permission was obtained from the team managers to administer the ACSI-28. The researcher and team coach administered the self-report questionnaire to all participants. The WCL participants answered the questionnaire during their practice sessions. The

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PBL participants answered the questionnaire at their hotel, while in Cape Town or Johannesburg. The questionnaire took approximately 25 minutes to complete. The participants were told that all results are confidential, and will only be used for research proposes.

RESULTS

The results supporting the hypotheses will be reported, followed by the results extending the cross-cultural research. A one-way ANOVA was performed to compare the means of the professional and social basketball players for the ACSI-28 regarding global psychological skills. The results are reported in Table 1.

Table 1
Summary of One-Way ANOVA for Basketball Players on Global Psychological Skills Scores

Source	df	Sum of Squares	Mean Squares	F	p
Between Groups	1	1573.37	1573.37	13.67	.000
Within Groups	125	14420.35	115.36		
Total	126	15993.72			

There was a statistically significant difference between professional and social basketball players, $F(1, 125) = 13.67$, $p < 0.01$, with professional basketball players ($M = 56.77$) rating their global psychological skills higher than non-professional basketball players ($M = 49.72$).

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To compare the means of the professional and social basketball players for the specific psychological skills of the ACSI-28, a MANOVA was performed. The results are reported in Figure 2 and Table 2.

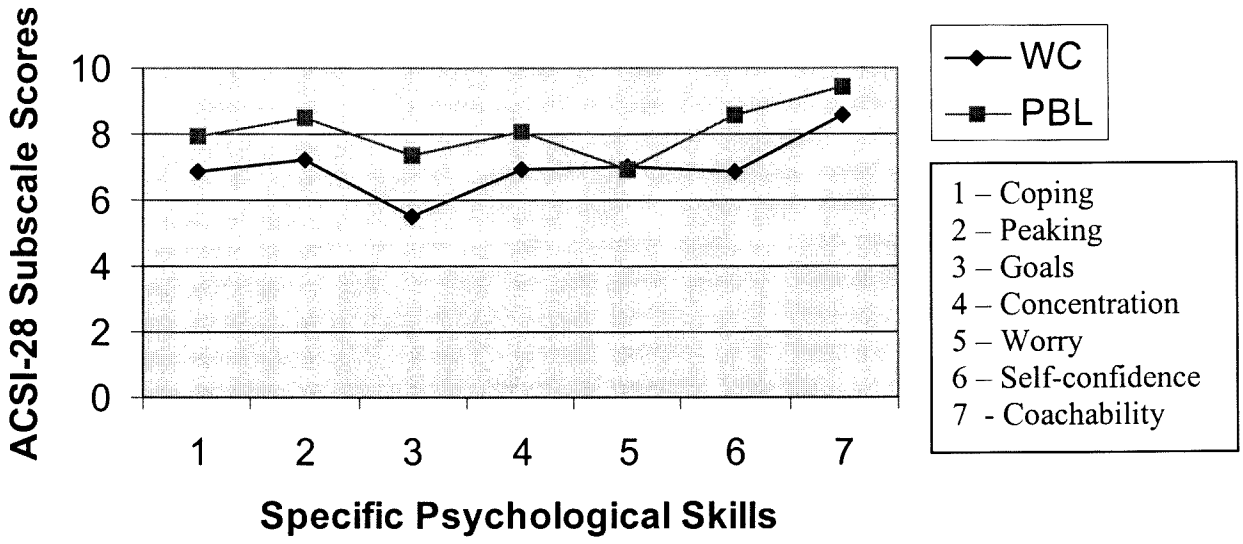

Figure 2. Means of specific psychological skills for WC and PBL basketball players

Table 2

Summary of MANOVA for Basketball Players on Specific Psychological Skills Scores

Source	df	Wilks' Lambda	F	p
Groups	7	.836	3.34	.003
Error	119	.033		

The results showed a significant multivariate Wilks' Lambda, transformed to a $F(7, 119) = 3.34$, $p < 0.01$.

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Pairwise comparisons were done to identify statistically significant differences for specific psychological skills. Bonferroni confidence intervals for mean differences were computed to control the familywise error rate for multiple comparisons. The results are reported in Table 3.

Table 3

Pairwise Comparisons for Basketball Players on Specific Psychological Skills Scores

Subscales	Mean Differences	Bonferroni Intervals		p
1. Coping	.932	.057	1.806	.037
2. Peaking	1.218	365	2.071	.005
3. Goals	1.798	.827	2.769	.000
4. Concentration	1.007	.340	1.674	.003
5. Worry	.216	- . 709	.709	.645
6. Self-confidence	1.582	.835	2.329	.000
7. Coachability	.730	-.105	1.566	.086

The pairwise comparisons showed significant differences on five specific psychological skills: coping with adversity, peaking under pressure, goal setting, concentration and confidence ($p<.05$), with professional basketball players reporting superior psychological skills than social basketball players. Freedom from worry and coachability were the only subscales that did not show significant differences.

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To extend the cross-cultural research the psychological skills (ACSI-28) of South African PBL basketball players, Greek national basketball players (Vassiliki et al., 1998) and professional baseball players from the United States of America (Smith & Christensen, 1995) were compared. The results are reported in Figure 3.

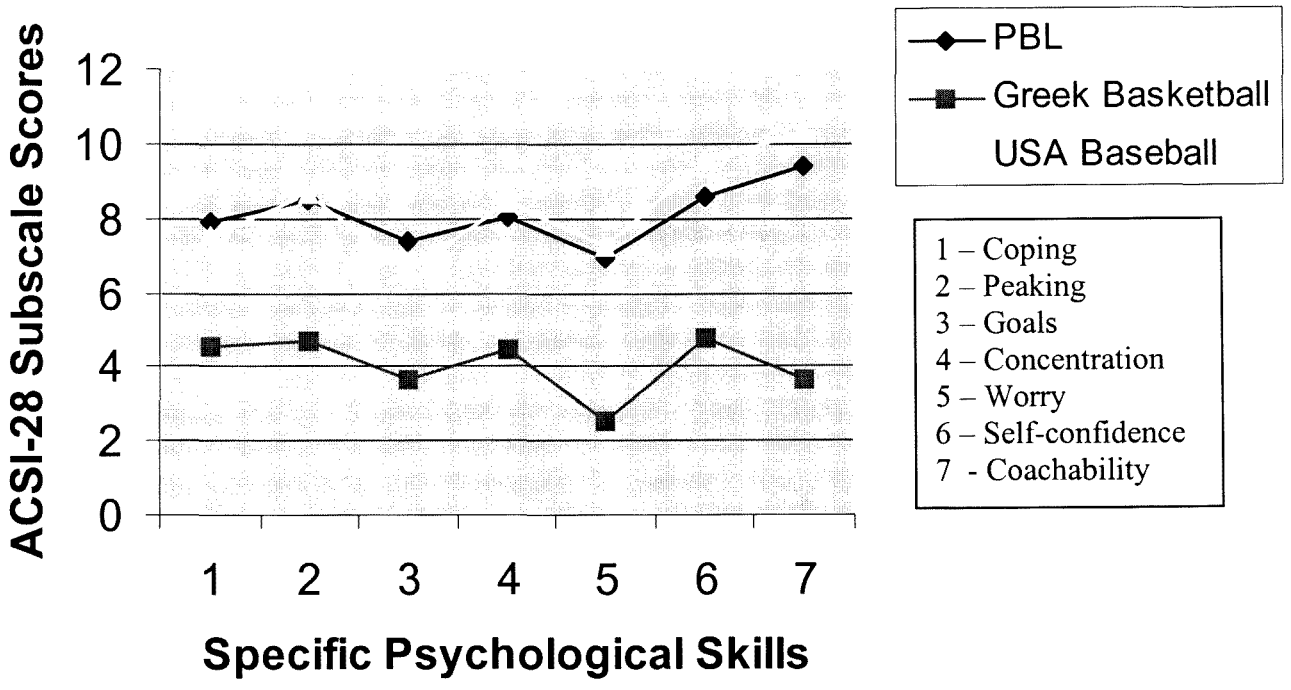

Figure 3. Means of specific psychological skills (ACSI-28) for South African, Greek and American athletes

South African elite basketball players showed higher psychological skills than elite Greek basketball players. The profiles of all three graphs are similar for the specific psychological skills; coping with adversity, peaking under pressure, goal setting, concentration, freedom from worry and self-confidence.

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DISCUSSION

The aim of the present study was to assess and compare the psychological skills of professional and social basketball players in the South African context. The hypothesis that professional basketball players will rate their global psychological skills significantly higher than the social basketball players was supported by the present study. This result is consistent with past research (Mahoney, 1989; Weinberg & Gould, 1995), which shows that elite athletes have superior psychological skills than non-expert or novice athletes.

Professional basketball players might report superior profiles because they have been trained longer in situations where it is necessary to learn psychological skills (Weinberg & Gould, 1995). A similar explanation is offered by Ericsson et al. (1993) who believe that the PBL basketball players superior psychological skills could be explained by them learning to adapt to the demands of naturally occurring situations in basketball and through extended periods of deliberate practice.

The hypothesis that professional basketball players would rate their specific psychological skills significantly higher than social basketball players was supported on five of the seven specific psychological skills. All five of these psychological skills were in the expected direction with the professional basketball players rating the psychological skills; coping with adversity, peaking under pressure, goal setting, concentration and self-confidence, higher than the social basketball players.

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This result is consistent with past research (Vassiliki et al., 1998), which shows that the specific psychological skills; coping with adversity and peaking under pressure of elite basketball players were superior to non-expert basketball players. Although specific psychological skills are essentially individual skills, they are interdependent. Coping with adversity and peaking under pressure are both determined by the athlete's ability to control and manipulate himself in relation to the environment. Professional basketball players utilise other specific psychological skills (e.g. goal setting and concentration) better than social basketball players, which could explain their superior skill in coping with adversity and peaking under pressure.

It is also possible that professional basketball players have learned to recognise and reduce impending anxiety more effectively than social basketball players, which allows for superior coping with adversity and peaking under pressure skills (Gould & Krane, 1992).

The present finding that PBL players utilize goal setting more than WC players is supported by past research (Goudas et al., 1998). Not all studies (Vassiliki et al., 1998) support the hypothesis that elite basketball players use goal setting more than non-expert basketball players. A reason for professional basketball players using goal setting more frequently than social players could be the emphasis placed on performance within professional sport (Mento et al., 1987). It is also likely that professional basketball players experience more rewards and benefits from using goal setting than social players and are therefore more motivated to use the skill.

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The indirect thought process model (Weinberg & Gould, 1995) proposes that professional basketball player's, better use of goal setting will indirectly improve their self-confidence, anxiety control and concentration. The direct mechanistic model (Weinberg & Gould) proposes that goal setting also helps the professional athlete to direct attention, remain motivated and in the development of new learning strategies. Despite these obvious benefits, the goal setting means of the PBL and WCL basketball players are the lowest specific psychological skills scores (see Figure 2). These low scores are consistent with the findings of past researchers (Burton et al., 1998) who suggest, that goal setting could be under-utilized in sports, especially when compared to industrial settings.

The finding that PBL players have superior concentration skills is consistent with past research (Bowe, 1996; Raviv & Nable, 1988). The following principles provided by Nideffer (1976) could explain the superior concentration skills of the PBL basketball players:

1. PBL Basketball players engage in more different types of concentration and are able to shift these types of concentration to match the changing demands, better than the WCL basketball players.
2. The PBL basketball players have a better knowledge and understanding of the strengths and weaknesses of their concentration types and therefore choose to utilize their most developed attentional ability, when faced with the pressure to perform.

Another reason for the superior concentration skills of professional basketball players could be the belief, that their skill level is well matched with the demands of basketball (Murphy & Tammen, 1998).

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Although Goudas et al. (1998) and Thomas and Sinclair (1978) support the present finding that professional basketball players have superior self-confidence, the opposite (Vassiliki et al., 1998) was also found. The social learning theory could explain the finding that professional basketball players have a higher degree of certainty about their ability to be successful, than social basketball players. Significant factors according to Bandura (1977) that contribute to the superior self-confidence beliefs of the professional basketball players could be their better past performance accomplishments and vicarious experiences.

In the current context, it is more likely that the PBL basketball players perceive themselves to be more similar to other successful basketball players, and therefore provide themselves with their own vicarious experiences. Another likely reason for significant self-confidence differences according to Bandura (1977) could be that professional basketball players utilise more positive self-talk and are provided with more verbal persuasion, about their ability than social basketball players are.

Although not a significant difference, social basketball players reported worrying less than the professional basketball players did. Vassiliki et al. (1998) also found expert basketball players worried more about their performance than non-expert basketball players. This could be as a result of the emphasis placed on performance, within professional sport. The performance of professional athletes is vital because it is directly related to financial survival. Although professional basketball players worry more about their performance than social basketball players, their other more superior psychological

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skills e.g. coping with adversity, concentration and self-confidence will enable them to deal more effectively, with the anxiety and pressure they place on themselves to perform.

To extend the cross-cultural research into psychological skills the profiles (ACSI-28) of elite South African, USA and Greek athletes were compared (see Figure 3). South African elite basketball players showed superior psychological skills profiles when compared to Greek elite basketball players. This finding shows that cross-cultural differences might exist between elite basketball players from different countries. This result is consistent with past research where American basketball players reported higher psychological skills than Chinese basketball players (Cox et al., 1996).

Interestingly the profiles of all three graphs (see Figure 3) are similar for the following specific psychological skills; coping with adversity, peaking under pressure, goal setting, concentration, freedom from worry and self-confidence. This finding shows that the specific psychological skills (ACSI-28) of elite athletes from different sports and countries are not domain specific. Although cross-cultural differences exist within basketball it seems that there are certain specific psychological skills, which are important for all elite athletes. The similarity between elite athletes (basketball and baseball) from three different countries suggests that an elite athletic profile could exist. Research with the Profile of Mood States (POMS) questionnaire has found elite athletes conform to the ice-berg profile. The ice-berg profile is a favourable psychometric configuration, where the athlete scores below the population mean for the negative constructs of tension, fatigue and confusion and above the mean for the only positive construct, vigour (Morgan, 1978). Is this ACSI-28 profile of elite athletes similar to the

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iceberg profile from the Profile of Mood States? The relationship between the individual items of the ACSI-28 needs to be investigated further to see if such an elite "ice-berg" profile exists with the ACSI-28.

A lingering criticism of applied sport psychology research and of the present study is the shotgun approach, which does not study the development of expertise. It would be beneficial to conduct a longitudinal study of the development of psychological skills within basketball across ages and levels. Although the ages of the PBL and WC basketball players were measured, it was not statistically used or controlled in the present study. Since psychological skills can be learned over time, it is reasonable to assume that age could have been a influencing factor.

The scope of the present study was limited because it measured a limited number of psychological skills. Other psychological skills (e.g. imagery), which have been found to be significantly related to the performance of elite athletes (Murphy & Tammen, 1998), needs to be researched to ascertain it's relevance for South African basketball players.

In conclusion, the present results show that South African expert basketball players differ from novice basketball players on the basis of the specific psychological skills; coping with adversity, peaking under pressure, goal setting, concentration and self-confidence. Sport psychologists should be aware that cultural differences could influence the psychological skills levels of elite athletes within the same sport. The assumption that psychological skills is domain specific was not verified as baseball and basketball players from different countries, showed remarkably similar ACSI-28 profiles. This finding

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suggests that certain specific psychological skills (coping with adversity, peaking under pressure, goal-setting, concentration, freedom from worry and self-confidence) are important regardless of nationality or sporting code and it raises questions concerning the existence of an elite athletic psychological skills profile.

The interest in basketball within South Africa is growing rapidly and it is the responsibility of the coaches and sport psychologists to promote not only the physical performance but also the players mental potential. Although South Africa is not a traditional force in international basketball, the psychological skills of South African basketball players are shown to be similar too, and even superior to other leading sporting nations. The specific psychological skills which are acquired and used by elite athletes universally and the psychological skills which are proven by the present study to be culturally relevant to South African basketball players, should form the basis for a psychological skills training programme for South African elite and pre-elite basketball players.

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APPENDIX A

Survey of Athletic Experiences

Years played in PBL/WC: ..... Age:.....

Position:

Guard	
Forward	
Centre	

A number of statements that athletes have used to describe their experiences are given below. Please read each statement carefully and recall as accurately as possible how often you experience the same thing in the PBL / WCL. There are not right or wrong answers. Do not spend too much time on any one statement:

	Almost never	Some-times	Often	Almost always
1. On a daily or weekly basis, I set very specific goals for myself that guide what I do.				
2. I get the most out of my talent and skills.				
3. When a coach tells me how to correct a mistake I've made, I tend to take it personally and feel upset.				
4. When I'm playing basketball, I focus my attention and block out distractions.				
5. I remain positive and enthusiastic during matches, no matter how badly things are going.				
6. I tend to play better under pressure because I think more clearly.				
7. I worry quite a bit what others think of my performance.				
8. I tend to do lots of planning of how to reach my goals.				
9. I feel confident that I will play well.				
10. When a coach criticizes me, I become upset rather than helped.				
11. It is easy for me to keep distracting thoughts from interfering with something I am watching or listening to.				
12. I put a lot of pressure on myself by worrying how I will perform.				

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	Almost never	Some-times	Often	Almost always
13. I set my own performance goals for each practice.				
14. I don't have to be pushed to practice or play hard; I give 100%.				
15. If a coach yells at me, I correct the mistake without getting upset about it.				
16. I handle unexpected situations in basketball very well.				
17. When things are going badly, I tell myself to keep calm, and this works for me.				
18. The more pressure there is during a game, the more I enjoy it.				
19. While competing, I worry about making mistakes or failing to come through.				
20. I have my own game plan worked out in my head long before the game begins.				
21. When I feel myself getting to tense, I can quickly relax my body and clam myself.				
22. To me, pressure situations are challenges that I welcome.				
23. I think about and imagine what will happen if I fail or screw up.				
24. I maintain emotional control no matter how things are gong for me.				
25. It is easy for me to direct my attention and focus on a single object or person.				
26. When I fail to reach my goals it makes me try even harder.				
27. I improve my skills by listening carefully to advice and instruction from coaches.				
28. I make fewer mistakes when the pressure's on because I concentrate better.				